

ABSTRACT

A production method of synthetic silica glass according to the present invention comprises a first step of ejecting a silicon compound and a combustion gas containing oxygen and hydrogen from a burner to effect hydrolysis of the silicon compound in oxyhydrogen flame to produce fine particles of silica glass, and thereafter depositing and vitrifying the fine particles of silica glass on a target opposed to the burner to obtain a synthetic silica glass ingot; a second step of heating the synthetic silica glass ingot or the like obtained in the first step up to a first retention temperature of not less than 900°C, retaining the ingot or the like at the first retention temperature, and cooling the ingot or the like at a temperature decrease rate of not more than 10°C/h down to a temperature of not more than 500°C; and a third step of heating the synthetic silica glass ingot or the like obtained in the second step up to a second retention temperature of not less than 500°C nor more than 1100°C, retaining the ingot or the like thereat, and thereafter cooling the ingot or the like at a temperature decrease rate of not less than 50°C/h down to a temperature 100°C lower than the second retention temperature.